REMARKS

This amendment responds to the Office Action of March 31, 2005.

Claim Rejections - 35 U.S.C. § 112

Claims 8-10 were rejected under § 112, second paragraph, as being indefinite because of the use of the term "fuel impeller." The examiner suggested that the expression be amended to --a diaphragm in said housing--. This suggestion has been adopted by making the change suggested by the examiner. Accordingly, the rejection under § 112 of claims 8-10 can now be withdrawn.

Claim Rejections - 35 U.S.C. § 103

Claims 1-10 were rejected under § 103 as unpatentable over Rockwell in view of Stumpf. The rejection indicates that Rockwell, the principal reference, does not include a plurality of heat transfer fins, extending externally of and encircling the bowl and hood, and interrupted by ports, with the fins extending from the mounting arm. Stumpf was used as a teaching of a plurality of heat transfer fins for a fuel pump.

Official notice was taken by the Examiner that in the heat transfer art wherein fins are positioned in airflow, that the fins are positioned parallel to the airflow, and can encircle the device to be cooled.

Applicant acknowledges that heat transfer fins are part of the prior art, but applicant does not acknowledge that heat transfer fins extending about a fuel pump as describe in the claims are part of the prior art. It appears that the closest prior art available to the examiner are the two references cited.

Applicant's invention reduces the likelihood of the occurrence of a problem in the operation of high performance engines in high heat conditions, where vaporization of the fuel can occur and have a deleterious effect on the performance of the engine. Applicant's fuel pumps have cooling fins that are novel. The cooling fins 74 of applicant's invention surround the conically shaped hood 34 that is mounted atop the pump bowl 36. In addition, cooling fins 76 extend about the mounting arm 49. Therefore, it can be seen that the cooling fins of applicant's invention cool surfaces that are not directly contacted by the fuel. Ultimately, the cooling fins 72 of the pump bowl tend to expel heat in the presence of the fuel.

The heat to be transferred by conduction from the engine to the fuel passing through the fuel pump must first pass through the mounting arm 49, then through the hood 34, then through the pump housing 32 and finally to the liquid fuel in the pump housing.

The cooling fins on the mounting arm 49 remove some of the heat before the remaining heat reaches the hood, the cooling fins of the hood remove some more of the heat before the remaining heat reaches the fuel bowl, and the fins of the fuel bowl remove some more of the heat before the remaining heat has the opportunity to reach the fuel. This has the effect of the significant amount of heat conducted from the engine toward the fuel being dissipated before the heat reaches the fuel.

The construction of the components with the cooling fins enables the applicant to maximize the effect of cooling fins, not only on the pump bowl of the assembly that is directly contacted by fuel but, most importantly, by dissipating the heat that is transferred to the preceding components, the mounting arm 49 and the hood 34.

Neither Rockwell nor Stumpf show this concept. The fins 199 and/or 202 of Figs. 8 and 9 of Rockwell appear to be related to a head 171 that carries a riser 193 with radiating fins 199. (Page 3, col. 2, beginning at line 3.)

However, Rockwell does not appear to utilize the fins directly on the fuel bowl, and particularly not on the mounting arm or on the hood of the product.

While Stumpf appears to show cooling ribs 32 on a fuel pump 16, the illustration is rather primitive and it is not clearly understood where the heat would be extracted from the fuel pump. Moreover, Stumpf does not appear to utilize the concept of fins for extracting heat from the mounting arm that is directly connected to the combustion engine, where the greatest heat would be transferred from the engine toward the fuel.

Claim 5 describes the fuel pump assembly that has the mounting arm with its fins projecting therefrom for the transfer of heat received from the combustion engine to the surrounding air before the heat moves through the mounting arm to the pump housing. This is not shown by the combination of Rockwell and Stumpf.

Claim 8 describes the diaphragm actuator extending through the mounting arm, the plurality of cooling fins extending from the pump housing and from the mounting arm, with the cooling fins that extend from the pump housing being oriented substantially parallel to the anticipated direction of flow of the air at the exterior surface of the engine. Again, Rockwell and Stumpf do not disclose these features. Also, the surrounding fins provide an increased likelihood of heat transfer away from the fuel.

Applicant acknowledges that cooling fins are old in the art. However, the novel placement of cooling fins by applicant in the particular configuration as described in the claims

provides an improved result in the reduction of temperature of the fuel and the resulting avoidance of vapor lock of the fuel.

Accordingly, applicant submits that the claims of the application should now be in condition for allowance, and early favorable action is requested.

Respectfully Submitted,

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